

UNIVERSITY OF HOUSTON
DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING
ECE 3355 Electronics
Fall 2024

Section (Class Number): 16400

Class time and place: 10-11:30am, TuTh, Room CBB 124 (Classroom and Business Building, 4242 Martin Luther King Blvd.)

Instructor: Dr. Dave Shattuck

Office Room: N336-D (4226 Martin Luther King Blvd.)

Office Phone: (713) 743-4422 **Mobile:** (713) 498-6888

E-mail: shattuck@uh.edu or dshattuc@central.uh.edu (Both of these email addresses go to the same email inbox. Use either one.)

Office Hours: 2-3:30pm, Tuesdays and Thursdays, or by appointment by sending an email to the address above. When requesting an appointment, please suggest a time and date. I will respond with acknowledgement, or a suggestion for an appropriate alternative.

Course web site: <http://courses.egr.uh.edu/ECE/ECE3355/>

Prerequisites: 1. ECE 2202

Credit for or concurrent enrollment requisite: 1. ECE 3155 Electronics Laboratory
2. ECE 3337 Signals and Systems Analysis

Waivers of these requisites are possible only through a Waiver of Prerequisites form submitted to the Electrical and Computer Engineering Department, available on the web at:

<https://www.ece.uh.edu/undergraduate/advising-forms/prerequisite>

Text: Sedra and Smith, Microelectronic Circuits, 8th Ed., Oxford University Press, 2020, ISBN 9780190853532.

Recommended for Supplementary Self-Study:

- *Old Exams* and other supplementary materials available on the course web site listed above.
- Horowitz and Hill, The Art of Electronics, 2nd. Ed., Cambridge University Press, ISBN 0-521-37095-7. This is a less formal text that nicely complements our text, but we will not use it in class nor assign work from it.

Catalog Course Description:

ECE 3355 Electronics Credit Hours: 3

Lecture Contact Hours: 3 Lab Contact Hours: 0

Prerequisite: ECE 2202; all prerequisites must be completed with C- or higher.

Corequisite: Credit for or concurrent enrollment in ECE 3337 and ECE 3155.

Description: Signal and amplifier concepts; operational amplifiers; diodes and nonlinear circuits; bipolar junction transistors; biasing, small and large signal analysis; transistor amplifiers.

Expected Course Outcomes

Students who successfully complete these courses are expected to meet the following course outcomes.

- Students will further develop their basic skills of problem solving and critical thinking by learning electronics concepts and techniques such as the plotting of Bode plots. They will apply this knowledge of mathematics, science and engineering to efficiently solve electronics problems. (ABET outcome 1)
- Students will add to their knowledge-base in the fundamentals of electrical engineering, especially in the area of electronics, in part by gaining a greater understanding of key engineering concepts, such as amplifier behavior and feedback. Students will use this knowledge and understanding to solve electronics problems such as those that come up in electrical engineering. (ABET outcome 1)
- Students will demonstrate an appropriate level of attention to detail and the use of clear, appropriate notation, which will facilitate their ability to communicate effectively with technical colleagues. (ABET outcome 3)
- Students will develop a sense of the need to engage in life-long learning by examining the dynamic nature of modern electronics devices, and show their ability to engage in life-long learning by applying fundamental concepts to new devices. (ABET outcome 7)

Academic Honesty Policy:

Students in this course are expected to follow the *Academic Honesty Policy* of the University of Houston. It is your responsibility to know and follow this policy. You **must** sign the Academic Honesty Statement on the last page of this handout, detach it, and submit it to your instructor by **Thursday, August 28, 2024**. If you fail to do this, you may be dropped from the course. See the policy on the web at <https://publications.uh.edu/content.php?catoid=52&navoid=19655> .

Religious Holy Days:

Students whose religious beliefs prohibit class attendance on designated dates or attendance at scheduled exams may request an excused absence. To do this, you are **strongly encouraged** to request the excused absence, in writing. Please submit this written request to your instructor to allow the instructor to make appropriate arrangements. For more information, see the catalog at <https://publications.uh.edu/content.php?catoid=52&navoid=19523> .

E-mail Policy and Information:

The instructor will send some kinds of information by email, through Canvas. You are encouraged to check your email frequently to make sure that receive these messages.

Attendance

Attendance at all classes is expected and required. The instructor may, if he chooses, take attendance in any class, at any time during the class. The instructor may do this as many times per class period as he chooses, without warning. The attendance grade can be included in the grade for the course. Typically, the percentage of days you attended class on time is multiplied by your homework and quiz averages.

Exams and Quizzes

There will be two examinations, given on the dates listed below. These examinations will last for 75 minutes. The final exam will last 100 minutes.

Exam 1: Tuesday, September 24

Exam 2: Tuesday, October 22

A comprehensive final exam will be given on **Tuesday, December 3, 2024 at 4pm**. If you have a conflict with any exam time, you must notify your instructor in writing during the first week of classes.

Roughly six in-class **quizzes** will also be given during the semester. They will typically last 20 to 30 minutes. The lowest quiz grade will be dropped from the average.

Conduct of Examinations

All examinations and quizzes are closed book and closed notes, unless otherwise announced. You may use any calculator you choose, but communications devices are not permitted. In addition, you may bring a “crib” sheet consisting of one 8½ x 11-inch sheet of paper, with writing on both sides. If you prefer, you may bring note cards or other writing media with a total area equivalent to two sides of an 8½ x 11-inch sheet of paper.

The following items are **not** permitted during the exams: laptop computers; connections to the internet of any kind; communications devices of any kind. For this course, a TI-nspire or equivalent device is considered a calculator, and is therefore permitted.

Homework

Completion of homework assignments is essential to your understanding of the subject. No matter how good your instructor may be, it is impossible for him/her to convey every conceivable nuance of a given topic. Therefore, the only effective way for you to learn the material is to practice by doing problems. You should not expect to do very well in Electronics if you do not work problems. Homework is intended to help you learn, and is not a mechanism for earning class points, nor for evaluating your work. Nevertheless, there is benefit to having a regular reminder and motivation to remain up-to-date in your studies. Therefore, homework will be assigned, collected, and graded on a regular basis.

Grading Policy

Grades will be determined on the basis of performance on the regular exams and quizzes, the final exam, and laboratory work (see below), with the following approximate weights. The weights will be fixed at the end of the semester.

Exam 1	20-30%
Exam 2	20-30%
Final Exam	30-40%
Homework	3-10%
Quizzes	10-20%

The following approximate grading scheme will be used to determine your grade. Note that grades will not be "curved", but instead have been previously determined by numerical average. While this scale may be modified somewhat, this listing gives a general idea of how well you are doing in the course. The final grade scale will be determined at the end of the semester.

90.00 - 100:	A's
78.00 - 89.99:	B's
66.00 - 77.99:	C's
54.00 - 65.99:	D's
Below 54.00:	F

Withdrawal Policy

The withdrawal dates listed in the online Academic Calendar <http://publications.uh.edu/content.php?catoid=34&navoid=12780> , will be followed strictly. Grades of Incomplete (I) will be given only when a small portion of the course has not been completed for a good reason. If the material has been completed, an "I" grade cannot be given. Detailed information about these issues is available in the *University Catalog*, at <http://publications.uh.edu/content.php?catoid=34&navoid=12501>.

Grade Posting

Grades will be available using Canvas, available on the web at through AccessUH. Normally, grades are available about one week after the final exam. The instructor is not allowed to give out grades over the phone or by email.

Laboratory Information

There is a separate laboratory course, ECE 3155, which should be taken at the same time as this course, unless you have already completed it satisfactorily. It is designed to reinforce the material taught in the lecture and to teach laboratory skills, measurement techniques, and techniques in written presentation of results. This semester, that course will be taught by Dr. Shattuck.

Mental Health and Wellness Resources

The University of Houston has a number of resources to support students' mental health and overall wellness, including [CoogsCARE](#) and the [UH Go App](#). UH [Counseling and Psychological Services \(CAPS\)](#) offers 24/7 mental health support for all students, addressing various concerns like stress, college adjustment and sadness. CAPS provides individual and couples counseling, group therapy, workshops and connections to other support services on and off-campus. For assistance visit uh.edu/caps, call 713-743-5454, or visit a [Let's Talk](#) location in-person or virtually. [Let's Talk](#) are daily, informal confidential consultations with CAPS therapists where no appointment or paperwork is needed.

Need Support Now?

If you or someone you know is struggling or in crisis, help is available. Call CAPS crisis support 24/7 at 713-743-5454, or the National Suicide and Crisis Lifeline: call or text [988](tel:988), or chat 988lifeline.org.

Title IX/Sexual Misconduct

Per the UHS Sexual Misconduct Policy, your instructor is a “responsible employee” for reporting purposes under Title IX regulations and state law and must report incidents of sexual misconduct (sexual harassment, non-consensual sexual contact, sexual assault, sexual exploitation, sexual intimidation, intimate partner violence, or stalking) about which they become aware to the Title IX office. Please know there are places on campus where you can make a report in confidence. You can find more information about resources on the Title IX website at <https://uh.edu/equal-opportunity/title-ix-sexual-misconduct/resources/>.

Reasonable Academic Adjustments/Auxiliary Aids

The University of Houston is committed to providing an academic environment and educational programs that are accessible for its students. Any student with a disability who is experiencing barriers to learning, assessment or participation is encouraged to contact the Justin Dart, Jr. Student Accessibility Center (Dart Center) to learn more about academic accommodations and support that may be available to them. Students seeking academic accommodations will need to register with the Dart Center as soon as possible to ensure timely implementation of approved accommodations. Please contact the Dart Center by visiting the website: <https://uh.edu/accessibility/> calling (713) 743-5400, or emailing jdcenter@Central.UH.EDU.

The [Student Health Center](#) offers a Psychiatry Clinic for enrolled UH students. Call 713-743-5149 during clinic hours, Monday through Friday 8 a.m. - 4:30 p.m. to schedule an appointment.

The [A.D. Bruce Religion Center](#) offers spiritual support and a variety of programs centered on well-being.

The [Center for Student Advocacy and Community \(CSAC\)](#) is where you can go if you need help but don't know where to start. CSAC is a “home away from home” and serves as a [resource hub](#) to help you get the resources needed to support academic and personal success. Through our [Cougar Cupboard](#), all students can get up to 30 lbs.

of FREE groceries a week. Additionally, we provide 1:1 appointments to get you connected to on- and off-campus resources related to essential needs, safety and advocacy, and more. The [Cougar Closet](#) is a registered student organization advised by our office and offers free clothes to students so that all Coogs can feel good in their fit. We also host a series of cultural and community-based events that fosters social connection and helps the cougar community come closer together. Visit the CSAC homepage or follow us on Instagram: @uh_CSAC and @uhcupbrd. YOU belong here.

Women and Gender Resource Center

The mission of the [WGRC](#) is to advance the University of Houston and promote the success of all students, faculty, and staff through educating, empowering, and supporting the UH community. The WGRC suite is open to you. Stop by the office for a study space, to take a break, grab a snack, or check out one of the WGRC programs or resources. Stop by Student Center South room B12 (Basement floor near Starbucks and down the hall from Creation Station) from 9 am to 5 pm Monday through Friday.

Academic Honesty Policy

High ethical standards are critical to the integrity of any institution, and bear directly on the ultimate value of conferred degrees. All UH community members are expected to contribute to an atmosphere of the highest possible ethical standards. Maintaining such an atmosphere requires that any instances of academic dishonesty be recognized and addressed. The [UH Academic Honesty Policy](#) is designed to handle those instances with fairness to all parties involved: the students, the instructors, and the University itself. All students and faculty of the University of Houston are responsible for being familiar with this policy.

Excused Absence Policy

Regular class attendance, participation, and engagement in coursework are important contributors to student success. Absences may be excused as provided in the University of Houston [Undergraduate Excused Absence Policy](#) and [Graduate Excused Absence Policy](#) for reasons including: medical illness of student or close relative, death of a close family member, legal or government proceeding that a student is obligated to attend, recognized professional and educational activities where the student is presenting, and University-sponsored activity or athletic competition. Under these policies, students with excused absences will be provided with an opportunity to make up any quiz, exam or other work that contributes to the course grade or a satisfactory alternative. Please read the full policy for details regarding reasons for excused absences, the approval process, and extended absences. Additional policies address absences related to [military service](#), [religious holy days](#), [pregnancy and related conditions](#), and [disability](#).

Recording of Class

Students may not record all or part of class, livestream all or part of class, or make/distribute screen captures, without advanced written consent of the instructor.

If you have or think you may have a disability such that you need to record class-related activities, please contact the [Justin Dart, Jr. Student Accessibility Center](#). If you have an accommodation to record class-related activities, those recordings may not be shared with any other student, whether in this course or not, or with any other person or on any other platform. Classes may be recorded by the instructor. Students may use instructor's recordings for their own studying and notetaking. Instructor's recordings are not authorized to be shared with anyone without the prior written approval of the instructor. Failure to comply with requirements regarding recordings will result in a disciplinary referral to the Dean of Students Office and may result in disciplinary action.

UH Email

Please check and use your CougarNet email for communications related to this course. Faculty use the CougarNet email to respond to course-related inquiries such as grade queries or progress reports for reasons of FERPA. To access your CougarNet email, [login](#) to your Microsoft 365 account with your CougarNet credentials. Visit [University Information Technology \(UIT\)](#) for instructions on how to connect your CougarNet e-mail on a mobile device.

Security Escorts and Cougar Ride

UHPD continually works with the University community to make the campus a safe place to learn, work, and live. The security escort service is designed for the community members who have safety concerns and would like to have a Security Officer walk with them, for their safety, as they make their way across campus. Based on availability either a UHPD Security Officer or Police Officer will escort students, faculty, and staff to locations beginning and ending on campus. If you feel that you need a Security Officer to walk with you for your safety, please call [713-743-3333](tel:713-743-3333). Arrangements may be made for special needs.

Parking and Transportation Services also offers a late-night, on-demand shuttle service called "Cougar Ride" that provides rides to and from all on-campus shuttle stops, as well as the MD Anderson Library, Cougar Village/Moody Towers and the UH Technology Bridge. Rides can be requested through the UH Go app. Days and hours of operation can be found at <https://uh.edu/af-university-services/parking/cougar-ride/>.

Syllabus Changes

Please note that the instructor may need to make modifications to the course syllabus. Notice of such changes will be announced as quickly as possible through email sent to the class.

Academic Honesty Statement

I have read the University of Houston Academic Honesty Policy available on the web at

<https://publications.uh.edu/content.php?catoid=52&navoid=19655>

I agree to abide by the provisions of this policy.

Name: (Please print) _____

Signature: _____

Date: _____

Please detach this page, and submit it to the instructor by Thursday, August 29, 2024. If you fail to do this, you may be dropped from the course.